

# SPECIFICATION

PRODUCT : Liver+

Code : PFP5128

Ingredient : *Starch* · *Inulin* · *Lactobacillus salivarius LS159* · *Lactobacillus johnsonii LJ170*

Items	Specifications	Methods
Color	Light yellow	Visual
Description	Capsule	Visual
Odor	Characteristic	Organoleptic
Taste	Characteristic	Organoleptic
LAB content	$1.8 \times 10^{10}$ CFU/capsule	CNS 14760
Each capsule net weight	> 400mg	In-house
Moisture	<8%	AOAC 934.01 ; CNS5033
<b>Heavy Metal</b>		
Total heavy metals	<10ppm	Colorimetric Detection as Pb
<b>Microbiology</b>		
Yeast & Molds	$<1 \times 10^2$ CFU/g	U.S. FDA bacteriological analytical manual and CNS 12925
Coliform	$<1 \times 10^2$ MPN/g	CNS 10951
<i>Escherichia coli</i>	Negative	Merck's Chromocult® Coliform Agar method
<i>Staphylococcus aureus</i>	Negative	CHROMagar <i>Staphylococcus aureus</i> Count
<i>Salmonella</i> spp.	Negative	CHROMagar <i>Salmonella</i> Count





# PRODUCT DATA SHEET

## *Liver+*

Gut microbiota has the largest numbers of microbes and the greatest numbers of species compared to other areas of the human body. In the gut, microbes secrete molecules and excrete metabolites to maintain the well-being of physical function and to influence the development of diseases. Probiotics ingestion can alter the flora balance to reduce the risk of disease. In 2001, the FAO/WHO expert consultation defines probiotics as live microbes that confer a health benefit on the host when administered in adequate amounts.

### **Description**

*Liver+* is the freeze-dried microbial culture blend. It is scientifically proven and helpful in alcoholic liver disease.

### **Composition**

*Lactobacillus salivarius* LS159  
*Lactobacillus johnsonii* LJ170  
Tapioca starch  
Inulin

### **Potency**

100 Billion CFU/g

### **Identification of microbe**

16S rDNA sequencing

### **Evaluation of probiotic potential**

Survival in simulated GI tract  
Adhesion to epithelial cells

### **Physical characteristics**

Appearance            White to cream-colored,  
                                 free-flowing powder  
                                 with characteristic odor

Moisture                < 5%

### **Antibiotics susceptibility**

	LS 159	LJ 170
Gentamicin	S	S
Kanamycin	R	S
Streptomycin	I	S
Neomycin	S	S
Tetracycline	S	S
Erythromycin	S	I
Clindamycin	S	S
Chloramphenicol	S	S
Ampicillin	I	S
Penicillin	I	S
Vancomycin	R	S
Quinupristin-dalfopristin	S	S
Linezolid	S	S
Trimethoprim	I	R
Ciprofloxacin	S	I
Rifampicin	S	S
S= Susceptible (MIC ≤ 4 µg/ml) I= Intermediate (MIC = 8-32 µg/ml) R= Resistant (MIC ≥ 64 µg/ml)		

### **GMO status**

*Liver+* does not consist of, nor contains, nor is produced from genetically modified organisms (GMOs).





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## *Liver+*

### **Microbial contaminants**

Yeast & Mold	< 100 CFU/g
Coliform	< 100 CFU/g
<i>Escherichia coli</i>	Negative
<i>Salmonella</i> spp.	Negative
<i>Staphylococcus aureus</i>	Negative
<i>Listeria monocytogenes</i>	Negative

### **Heavy metals index**

Arsenic	< 0.05 ppm
Lead	< 0.05 ppm
Mercury	< 0.05 ppm
Cadmium	< 0.05 ppm

### **Storage**

Under dry and cold conditions, preferably frozen temperature (-20°C), refrigeration (4°C) otherwise. The shelf life under frozen storage is two years or more.

### **Stability**

Half-life ( $t_{1/2}$ ) of viable cell count:

- ➊ More than two years at -20°C

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### **Allergens profile**

Substances causing allergies	Use or not	
	Yes	No
Milk <sup>➊</sup>	✓	
Soy		✓
Eggs		✓
Fish		✓
Cereals gluten		✓
Celery		✓
Mustard		✓
Nuts		✓
Peanuts		✓
Sesame seeds		✓
Lupin		✓
Molluscs		✓
Crustaceans		✓
Sulfur Dioxide		✓
<b>Description of components:</b>		
➊ Lactose is used in the culture medium.		

Refer to Regulation (EU) No 1169/2011

